Permitting Decisions- Bespoke Permit

We have decided to grant the permit for VPI Immingham Energy Park A Limited.

The permit number is EPR/HP3420PZ

The application is for the following scheduled activity :

> Section 1.1 Part A(1) (a) – Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.

The Installation comprises :

- 11 natural gas fired engines - having a total thermal input of approximately 108MWth
- 1 diesel powered black start engine - rated at less than 0.5 MWth – and to be for emergency use only

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

1. Purpose of This Document

This decision document provides a record of the decision-making process. It:

- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- highlights key issues in the determination
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit.

2. Key Issues of the Decision

Description of the Main Features of the Installation

The purpose of the Installation is to provide security of electricity supply by operating at times when there is a peak demand for electricity.

The Installation is located at National Grid Reference TA16720 17430 on land of approximately 1ha.

The permit will be for the following scheduled activity :

- Section 1.1 Part A(1) (a) – Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.

The Installation comprises :

- 11 natural gas fired engines - having a total thermal input of approximately 108MWth
- 1 diesel powered black start engine - rated at less than 0.5 MWth – and to be for emergency use only (for example, to provide emergency power if connection to the grid system was lost)

The following 3 “Directly Associated Activities” will also be undertaken :

- storage of diesel oil
- storage of lubricating oil
- surface water drainage (uncontaminated surface run-off)

Operating Hours

The engines will use lean burn principles to operate as peaking plant for less than 1,500 hours per year as a rolling average over 5 years - with operation in any individual year limited to a maximum of 2,250 hours.

We have restricted the operating hours of the installation by setting a specific condition in the permit.

Best Available Techniques Assessment

The assessment of the proposed operating techniques against the relevant BAT reference documents for this type of application is set out in Appendix D of “*Application Bespoke VPI-A_Main Supporting Document HP3420PZ A001 20.11.2022*” - which accompanied the application and is available on the Public Register.

We are satisfied that the proposal meets BAT for peaking plant operating less than 1,500 hours per year.

Further discussion is provided below regarding how we consider the key aspects of the proposal meet BAT.

Fuel Choice

The Applicant has chosen to operate their proposal using mains natural gas.

Using mains natural gas means that there will be negligible emissions of Sulphur Dioxide or Particulates - and minimises the need to store significant quantities of raw materials on site.

We are satisfied that, at present, the use of mains natural gas represents BAT in terms of fuel choice for this type of Installation.

Combustion Technology

The Applicant has proposed the use of reciprocating engines.

We consider that reciprocating engines are well suited for this type of peaking plant - as they are capable of quick start up / shut down times, allow for individual engines to be run at optimum loading - and provide the necessary flexibility required of this type of plant.

Emissions and Emissions Controls

The Applicant has :

- proposed the use of primary measures (lean mixture combustion), as opposed to Selective Catalytic Reduction (SCR) to ensure the BAT Emission Limit Values (ELV's) as prescribed in the Medium Combustion Plant Directive (MCPD) are met.

- not proposed any emissions control for the "Black Start Engine" – on the basis that it falls outside of the requirements of the MCPD.

As the Installation is not proposed to operate for more than 1500 hours (as a 5 year rolling average), we agree that this aspect of the proposal meets BAT.

As the Applicant has not quantified emissions of Methane or Formaldehyde in the application, we have decided to set improvement conditions within the permit (IC3 and IC4) requiring this to be done "within 12 months of the date on which fuel is first burnt".

Energy Efficiency

The proposed Installation will operate for less than 1,500 hours per year – and is therefore not subject to the requirements of Article 14 of the Energy Efficiency Directive.

The limited operating hours and the mode of operation of peaking plant as short-term operating reserve justify the non-inclusion in the proposal of waste heat recovery in the form of combined heat and power (CHP) or combined cycle operation.

The Applicant has stated that efficiency levels of the proposed engines are expected to be over 42%.

Whilst it is acknowledged that the proposed engines are not classified as Large Combustion Plant (LCP), the Applicant has compared these efficiency levels with "BAT Associated Energy Efficiency Levels" (BAT-AEEL) for LCP. For new engines fired on natural gas, the expected LCP BAT-AEEL is 39.5% - 44%.

It is noted that the expected efficiency of the peaking plant is within the relevant expected LCP BAT-AEEL. We are satisfied that the proposed energy efficiency levels are consistent with BAT - when taking into account the capped operating hours and the mode of operation of the proposed Installation.

Soil and Groundwater Protection

There will be no process discharges to water, sewer or land.

Ground surfaces for all operational areas are 100% impermeable, and controls are in place to address any accidental spillages of oil/ fuel (double bunding, use of oil interceptors).

The Applicant has stated that :

- The diesel generator will have an integral 950l double skinned tank within the base of the containerised generator unit. Any potential leaks would therefore be contained within the generator unit.

- There will be a 5,000 litre clean oil tank which will be double skinned and have appropriate leak detection systems in place.

  The tanker connection for filling the tank is housed within the double skin of the bulk tank - accessible via a lockable drop down access hatch. Any spills from coupling and uncoupling during oil delivery will therefore be contained within the bunded design of the tank.

- Lubricating oil will be stored in a dedicated above ground tank for storing up to 5,000 litres. The tank will be double skinned and therefore internally bunded - so as to contain any accidental spills.

  The tanker connection for delivery of lubricating oil will be housed within the bulk tank container (within the double skin) – accessible only via a

lockable drop-down access hatch. Any potential spillage that may occur during coupling or uncoupling hoses during oil delivery will therefore be maintained within the bunded design of the tank.

- The Installation will develop an Environmental Management System (EMS) - in line with the requirements of the ISO14001 standard – which will include procedures for controlling raw material delivery and spill response procedures.

  Spill kits will be available at various locations at the Installation - including the designated area for material delivery.

- There will be no other hazardous materials stored on site.

We consider, therefore, that the soil and groundwater protection measures proposed by the Applicant are adequate and proportionate to the risks associated with a process of this type.

Emissions to Air

The methodology for risk assessment of point source emissions to air is set out in our web guidance, along with the definitions of the parameters we look at to carry out the assessment and the significance criteria.

The Applicant provided an Air Quality Assessment which accompanies the application entitled "*Application Bespoke Appendix E - Air Quality Assessment HP3420PZ A001 30.11.2022"* - which is available on the Public Register.

This assessment predicts the potential effects on local air quality (on human health receptors and statutorily protected ecological receptors) of stack emissions of oxides of Nitrogen (NOx) from the Installation - using ADMS v5.2 dispersion model software.

We have reviewed the assessment and are satisfied that it has taken into account all human health receptors and relevant statutorily protected ecological receptors, that the model and its inputs are appropriate - and that the assessment has been carried out in accordance with our guidance.

Human Health Receptors

In relation to human health receptors :

- The predicted short term (i.e. hourly) process contribution (PC) at the worst-case human health receptor is shown to be 9% of the Environmental Standard (ES) for NO2 at the first stage of screening.

  As this is < 10% of the ES it can be screened out at this stage of the assessment – and is considered as being insignificant.

  It is concluded that an exceedance of the short term ES at any human health receptor is considered to be very unlikely.

- The predicted maximum long term (i.e. annual) PC impact at any off site location is shown to be 16% of the ES at the first stage of screening.

  As this is > 1% of the ES, it cannot be screened out at this first stage as being insignificant.

  The second stage of the assessment confirms the “Predicted Environmental Concentration” (PEC) at the worst case human health receptor to be 39% of the relevant ES.

  As this is < 70% of the ES, it is concluded that an exceedance of the long term ES at any human health receptor is considered to be very unlikely.

We agree with the Applicant’s conclusions regarding the impacts of air emissions at human health receptors.

<u>Ecological Receptors</u>

In relation to statutorily protected ecological receptors, the following statutorily protected sites are within the relevant screening distances of the site - and therefore require assessment :

- Humber Estuary Special Area of Conservation (SAC)
- Humber Estuary Special Protection Area (SPA),
- Humber Estuary Ramsar Wetland of International Importance (RAMSAR)
- Humber Estuary Site Special Scientific Interest (SSSI)
- North Killingholme Pits SSSI

Our review of the Applicant’s Air Quality Assessment identified that :

- the PEC of NOx associated with the proposed operations are <70% of the long-term and short-term critical levels at all receptors - when taking into account the relevant Background Concentration (BC)

- the PC from nutrient nitrogen deposition and the associated acidification contribution are <1% of the relevant critical loads for the features of these receptor sites which are sensitive to these risks.

- the habitat distribution in the area where the short-term PC of NOx are slightly higher than the insignificance threshold of 10% of the short-term critical level (i.e. up to 15%) consists mainly of intertidal mudflat – which is unlikely to be sensitive to toxic contamination due to changes in air quality.

- only a small area of the assessment domain is impacted by PC above the 10% insignificance threshold – which is mostly intertidal mudflat

- in any case, even at locations where this short-term PC exceed the insignificance threshold of 10% of the short-term critical level for NOx, there is ample margin between the PEC (calculated taking into account the BC) - and the critical levels.

- in relation to the SSSIs, the Applicant had concluded that the %PC of the Critical Load was < 1% - and able to be considered as insignificant

- however, the "Lower Value of Critical Load Range" used by the Applicant was not consistent with that currently reported on www.apis.ac.uk. We undertook a simple re-working of the figures presented - using data from www.apis.ac.uk – the outcome of which was consistent with the conclusions of the Applicant.

We are therefore satisfied that :

- the impacts of the Installation on the relevant SAC, SPA and RAMSAR are insignificant in relation to acidification, change in nutrients and toxic contamination.

- the impacts of the Installation on the relevant SSSIs' are insignificant and not likely to damage the features present.

Emissions of Noise

In accordance with our guidance, we determined that a Noise Impact Assessment (NIA) was not required for this application – however we note that a NIA was undertaken to support the planning application for the Installation.

Whilst this NIA has not been reviewed as part of the permit determination process – we note the Applicant's comments in their application – that :

- as it was not known what size gas engines would be used for the final Installation, a worst case scenario was assessed in their NIA – using 33 small or 8 large gas engines.

- the NIA concluded that noise levels would be likely to be 'lowest observable adverse effect level' (LOAEL) criteria of no greater than 5dB over the defined representative Background Sound Level at each Noise Sensitive Receptor.

- the final design configuration falls within the assessed envelope - and will result in impacts no worse than those predicted in the NIA.

We have applied standard noise conditions within the permit which we consider impose sufficient control should any issues arise with noise.

Emissions to Surface Water

Whilst we note that there will be not be any process discharges to controlled waters, "Surface Water Drainage" is a Directly Associated Activity – as identified in the permit application.

Having reviewed the application we note that :

- the Installation will increase the total area of impermeable surfaces at the site

- the surface water drainage system which is to be installed as part of the Installation will ensure that :

    - flooding is mitigated to an acceptable level during the design event and any flooding is directed to non-critical areas.

    - only uncontaminated surface water run-off, will be discharged to the Internal Drainage Board (IDB) drain at emissions point W1 - no process water will be discharged to the IDB drain.

    - in the event of a fire, the surface water drainage system would be closed to prevent contaminated water being released through surface water drains.

    - any contaminated wastewater will be taken off-site for suitable disposal.

We have therefore applied standard conditions within the permit which we consider impose sufficient control should any issues arise with surface water and associated emissions via emissions point W1.

Emissions to Sewer

There will be no generation of process water from the activities and therefore no emissions to foul sewer.

3. Decision considerations

Confidential Information

A claim for commercial or industrial confidentiality has not been made.

Identifying Confidential Information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

We consulted the following organisations:

- Director of Public Health & UK Health Security Agency

The application was publicised on the GOV.UK website.

The comments and our responses are summarised in the consultation responses section.

Operator

We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on legal operator for environmental permits.

The Regulated Facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN2 ‘Defining the scope of the installation’, and Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’

The operator has provided the grid reference for the emission points from the medium combustion plants.

The extent of the facility defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The Site

The operator has provided a plan which we consider to be satisfactory.

This shows the extent of the site of the facility including the discharge points.

The plan is included in the permit.

Site Condition Report

The operator has provided a description of the condition of the site, which we consider is not satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

Nature Conservation, Landscape, Heritage and Protected Species and Habitat Designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England but have informed them of our assessment and decision. The decision was taken in accordance with our guidance.

Environmental Risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment the emissions may be screened out as being environmentally insignificant.

Operating Techniques

We have reviewed the techniques proposed by the operator and compared these with the relevant technical guidance and we consider them to represent appropriate techniques for the facility.

We consider the proposed operating techniques are BAT for the proposed installation. Refer to Section 2 for further details.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Operating Techniques - for Emissions that do not Screen Out as insignificant

Emissions of Nitrogen Dioxides cannot be screened out as insignificant.

We have assessed whether the proposed techniques are Best Available Techniques (BAT).

The proposed techniques/ emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility.

Refer to Section 2 for further details.

Operating techniques for emissions that screen out as insignificant

Emissions of Carbon Monoxide have been screened out as insignificant, and so we agree that the applicant's proposed techniques are Best Available Techniques (BAT) for the installation.

We consider that the emission limits included in the installation permit reflect the BAT for the sector.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Improvement Programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included an improvement programme to ensure that

- **IC1:** The air emissions monitoring locations meet the requirements of standard BS EN 15259

- **IC2:** The performance of the plant as installed is consistent with the design parameters set out in the Application

- **IC3:** The Operator establishes the emissions of methane from the engines and proposes a plan to assess any methane slip over their operational life.

- **IC4:** The Operator shall establish emissions of formaldehyde from the engines and provide a risk assessment covering these emissions.

Emission Limits

Emission Limit Values (ELVs) have been specified for the following substances:

- Oxides of Nitrogen (NO and NO_2 expressed as NO_2**)**

ELVs for oxides of nitrogen were set according to MCPD and our assessment of BAT for the proposed operation mode.

Monitoring

We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.

We have specified annual monitoring frequency for these parameters: this is more frequent than the frequency specified by MCPD for MCP below 20 MWth input and that proposed by the Applicant.

We consider that the increased frequency is required by and proportionate to the increased environmental risk entailed by the higher aggregated thermal input in the scope of the installation (i.e. 108 MWth), compared to the requirement set out by MCPD for individual combustion plants below 20 MWth input.

These monitoring requirements have been included in order to demonstrate compliance with the emission limits set out in the permit for oxides of nitrogen; and in order to comply with the monitoring requirements set out within the MCPD for carbon monoxide.

Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

Reporting

We have specified reporting in the permit, according to the specified monitoring frequencies and parameters that we consider relevant to the proposed operation.

Management System

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Financial Competence

There is no known reason to consider that the operator will not be financially able to comply with the permit conditions.

Growth Duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

a. Consultation Responses

The following summarises the responses to consultation with other organisations, [our notice on GOV.UK for the public, newspaper advertising] and the way in which we have considered these in the determination process.

Responses from Organisations Listed in the Consultation Section:

Response received from UK Health Security Agency (UKHSA).

Brief summary of issues raised: The UKHSA’s response stated that “*the main emissions of potential concern are emissions to air of NOx and CO but effective abatement measures are in place and the potential impact on public health is not significant. Based on the information contained in the application supplied to us, UKHSA has no significant concerns regarding the risk to the health of the local population from the installation”*.

Summary of actions taken: No action taken